



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,758	07/28/2003	Didier Martin	033818-007	4423

21839 7590 10/19/2005

BUCHANAN INGERSOLL PC  
(INCLUDING BURNS, DOANE, SWECKER & MATHIS)  
POST OFFICE BOX 1404  
ALEXANDRIA, VA 22313-1404

EXAMINER

MAKI, STEVEN D

ART UNIT	PAPER NUMBER
----------	--------------

1733

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/627,758

Applicant(s)

MARTIN ET AL.

Examiner

Steven D. Maki

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-7 and 10-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-4,6,7 and 10-16 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 1733

- 1) The proposed drawing correction for figure 5 filed 7-21-05 has not been approved by the examiner and accordingly has not been entered since the specification fails to describe 3".
- 2) The proposed drawing correction for figure 6 filed 7-21-05 has not been approved by the examiner and accordingly has not been entered. Reference numeral 51" in new figure 6 is not described in the specification. Also, see next paragraph in this office action.
- 3) The amendment filed 7-21-05 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

The new matter is new figure 6. Although the original disclosure describes combining a channel in the motifs and orifices in the connecting elements (page 8 lines 1-2), the original disclosure fails to reasonably convey the specific shape, number and location for the orifice as shown in new figure 6.

With respect to the drawings filed 7-21-05, new figure 6 has not been approved by the examiner and has not been entered. See MPEP 608.02(x), page 600-110, Rev. 2, May 2004 ("Where the corrected or changed drawings is not accepted, for example, because the submitted corrections or changes ... involve new mater ... applicant will be notified and informed of any corrected action in the next office action" and MPEP 608.04, page 600-112, Rev. 2, May 2004 ("a 'new matter' amendment of the drawing is ordinarily not entered ..."))

Art Unit: 1733

Applicant is required to cancel the new matter in the reply to this Office Action.

4) The disclosure is objected to because of the following informalities:

(1) On page 6 line 27, "height H equal to the depth P of the groove 3" should be "height equal to the depth P of the groove 3 ( $H=0$ )--. See relationship of H and P in figure 1.

(2) The disclosure describes new figure 6, which as noted above, has not been entered.

Appropriate correction is required.

5) The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6) Claim 16 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 16, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention (i.e. the new matter) is the at least one channel passing through the whole of the motif in the longitudinal direction. The original disclosure shows passing a channel through the motif in the transverse direction *instead of* the longitudinal direction.

Art Unit: 1733

7) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8) Claims 2-3 and 13-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, the scope and meaning of "at least substantially perpendicular" is unclear. Is the elongated form substantially perpendicular or is it not? If "at least" broadens "substantially perpendicular" (the elongated orifice is not required to be substantially perpendicular), then what is the amount of the broadening? Is the range of "substantially perpendicular" broadened by 5 degrees, 10 degrees, 25 degrees, 45 degrees, 90 degrees, etc? In claim 3 line 2, it is suggested to delete --at least-- before "substantially perpendicular".

In claim 3 (indirectly dependent on claim 10), there is no antecedent basis for "said orifices" and it is unclear if the "produced on" language broadens the "passing through" language of claim 10. In claim 3 lines 1-2, it is suggested to change "the at least one orifice is produced on at least one connecting element" to --the at least one orifice includes orifices passing through the whole of the at least one rubber connecting element--.

Claim 13 describes "a tread comprising a contact face and lateral faces, a plurality of these motifs in relief". It is unclear what additional structure (e.g. transverse grooves and longitudinal grooves) is required by "a plurality of these motifs in relief"

Art Unit: 1733

(emphasis added). As a related matter, it is unclear if the motifs have the lateral faces, or, alternatively, if the lateral faces define shoulders of the tread.

Claim 16 is ambiguous since there is no antecedent basis for "the at least one orifice". In view of this lack of antecedent basis, does claim 16 require the orifice subject matter of claim 10?

9) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Billingsley

11) **Claims 4 and 10-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Billingsley (US 2575439, already of record).**

Billingsley discloses a tire having a tread comprising circumferential grooves and ribs 19 (land portions) and **cavities 21** wherein a **vent opening 22** connects the cavity to one of the grooves to reduce noise.

As to claims 13 and 15, the claimed cavity reads on cavity 21 of Billingsley, the claimed orifice reads on vent opening 22. With respect to trap and compress air and practically insensitive to the compression of the rubber resulting from the contact with

Art Unit: 1733

the roadway, note Billingsley's teachings that (1) the vent openings are not closed under weight of the vehicle (col. 2 lines 35-36) and (2) the vent openings reduce noise (col. 2 lines 50-55). The claimed rubber connecting elements read on the rubber through which the vent opening passes. In other words, the claimed rubber connecting elements can read the rubber forming the axially spaced apart sidewalls of the cavity 21 - this rubber extending from the running surface of the tread.

As to claims 10 and 12, Billingsley teaches that the ribs, which are separated by circumferential grooves, may be discontinuous - grooves oriented in the transverse direction and in the longitudinal direction of the tread thereby being defined.

As to claims 4, 11 and 14, H can be zero. See specification page 6 lines 26-28, figure 1, and amended paragraph for page 5 (page 2 of response filed 7-21-05).

**12) Claims 2, 4 and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billingsley and optionally at least one of Ishiyama (US 6668885 and Smith (US 864112)).**

Billingsley is considered to anticipate claims 4 and 10-15.

In any event: it would have been obvious to one of ordinary skill in the art to form Billingsley's cavities and vent openings in blocks defined by circumferential grooves and transverse grooves since (1) Billingsley teaches forming cavities and vent openings in ribs between circumferential grooves of the tire tread, (2) Billingsley teaches that the ribs may be discontinuous (col. 2 lines 1-7) and optionally (3) Ishiyama suggests forming a row of blocks ("a discontinuous rib") between circumferential grooves of a tire tread.

Furthermore, it would have been obvious to configure Billingsley cavities and vent openings such that the cavities trap and compress air and vent openings are practically insensitive to the compression of the rubber resulting from the contact with the roadway since (1) Billingsley teaches that (a) the vent openings (through which air passes) are not closed under weight of the vehicle (col. 2 lines 35-36) and (b) the vent openings reduce noise (col. 2 lines 50-55) and optionally (2) Smith, also teaching a tire having passages through which air passes, teaches that air is compressed in cavities.

As to claim 2, the claimed shape for the orifice would have been obvious and could have been determined without undue experimentation in view of Billingsley's teaching to form the vent opening such that the openings are not closed under the weight of the vehicle (col. 2 lines 33-34-38).

**13) Claims 6, 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billingsley and optionally at least one of Ishiyama and Smith as applied above and further in view of Japan 227 (JP 2001-130227).**

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

As to claims 6, 7 and 16, it would have been obvious to one of ordinary skill in the art to form a narrow circumferential groove having an upper part 26A (incision) part and a lower part 26B (channel) in Billingsley's discontinuous ribs since Japan 227 suggests forming such a narrow circumferential groove in a block like land portion ("a discontinuous rib") to enhance wet performance.



Art Unit: 1733

**14) Claims 6, 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billingsley and optionally at least one of Ishiyama and Smith as applied above and further in view of Watanabe (US 6315018) or Japan 308 (JP 2-303908).**

As to claims 6, 7 and 16, it would have been obvious to one of ordinary skill in the art to form a circumferentially extending sipe having a narrow part at the tread surface and a wide part below the tread surface such that the sipe passes through the whole of the motif in relief of Billingsley's discontinuous rib since (1) it is taken as well known / conventional in the tire tread art to form both end opening sipes in blocks such that the sipes extend in either the transverse or longitudinal direction in order to improve traction and (2) (a) Watanabe suggests forming a sipe through the whole of a block in a tire tread to improve wet performance and improve drainage after wear to compensate for deterioration of drainage performance of grooves due to their reduced depth after wear (figure 1, 2) or (b) Japan 908 suggests forming a sipe through the whole of a block to improve driving and braking performance on wet road and obtain good drainability (abstract, figures 5-6).

Matsuura

**15) Claims 2, 4 and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura (US 6220322) in view of Watanabe (US 6315018) or Japan 308 (JP 2-303908).**

Matsuura discloses a pneumatic tire having a tread comprising tread rubber wherein the tread includes blocks ("motifs") defined by circumferential grooves and

Art Unit: 1733

lateral grooves. Tie bars 7 are located in the outer circumferential grooves such that, as can be seen from figure 1, two blocks 5 are connected by two tie bars 7 (two "connecting elements"). Preferably, the tie bars have a height  $T_h$  of 75-100% of the groove depth. See figure 2a and col. 3 lines 7-10. The claimed "cavity" reads on the space defined between the lateral faces of the blocks 5 and the tie bars 7 connecting those blocks 5. Matsuura does not recite at least one orifice passing through the whole of at least one rubber element, which may be the motif instead of the connecting elements.

As to claims 10 and 13, it would have been obvious to one of ordinary skill in the art to form a sipe having a narrow part at the tread surface and a wide part below the tread surface such that the sipe passes through the whole of a block of Matsuura's tire tread since (1) Watanabe suggests forming a sipe through the whole of a block in a tire tread to improve wet performance and improve drainage after wear to compensate for deterioration of drainage performance of grooves due to their reduced depth after wear (figure 1, 2) or (2) Japan 908 suggests forming a sipe through the whole of a block to improve driving and braking performance on wet road and obtain good drainability (abstract, figures 5-6). The claimed "at least one orifice" reads on the wide bottom part of the sipe suggested by either Watanabe or Japan 908. This wide bottom part of the sipe is "practically insensitive" to the compression of rubber since it functions to drain water. The use a sipe having a wide bottom part directly corresponds to applicant's figure 5 embodiment.

As to claim 2, the long part of the sipe suggested by either Watanabe or Japan 908 is elongated in a direction perpendicular to the tread surface. See figure 2 of Watanabe or figure 6 of Japan 908.

As to claim 4, the claimed orifice would have been obvious in view of (1) Matsuura's teaching to use tie bars having height equal to 75-100% of groove depth (this teaching establishes "depth H") and (2) either Watanabe or Japan 908's teaching as to the size and location of the wide part of the sipe which is used for drainage.

As to claims 11 and 14, H can be zero. See specification page 6 lines 26-28, figure 1, and amended paragraph for page 5 (page 2 of response filed 7-21-05).

As to claims 12 and 15, Matsuura teaches that the height of the tie bar may be 100% of the groove depth.

#### **Allowable Subject Matter**

16) **Claim 3 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.**

**Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.**

#### **Remarks**

17) Applicant's arguments with respect to claims 2, 4, 6, 7 and 10-16 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 1733

Applicant's arguments filed 7-21-05 have been fully considered but they are not persuasive.

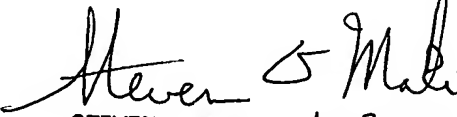
Applicant's argument that Watanabe and Japan 908 do not disclose orifices in communication with cavities is not persuasive since Matsuura's circumferential grooves separating block rows define cavities and Japan 908 / Watanabe motivate one of ordinary skill in the art to include "orifices" in blocks and open to circumferential grooves to improve water drainage.

18) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki  
October 3, 2005

  
STEVEN D. MAKI 10-3-05  
PRIMARY EXAMINER  
GROUP 1300  
Av 1733



3/3

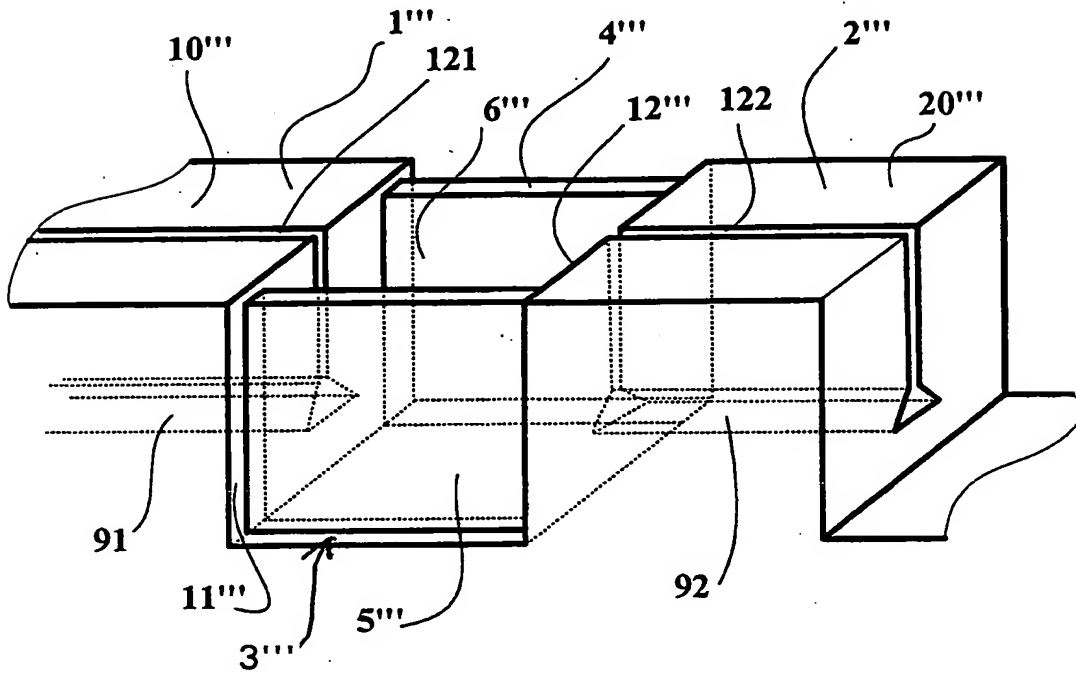


FIG. 5

DO NOT ENTER  
Jm 10-3-05



NEW SHEET  
Appln. Filing Date: July 28, 2003  
Title: TREAD WHICH REDUCES RUNNING NOISE  
Inventor(s): Didier Martin et al.  
Appln. No.: 10/627,758

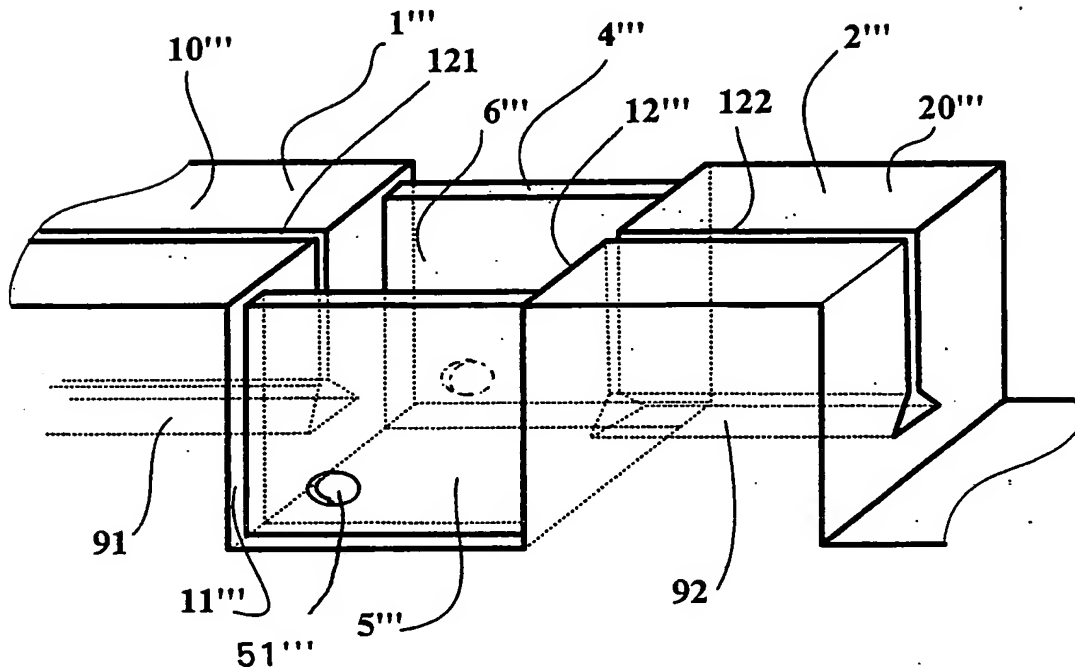


FIG. 6

DO NOT ENTER

dm 10-3-05